

Bangladesh Delta Plan 2100



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Guest lecture, Disaster Proof Water Management, 5 June 2019

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Inputs of many colleagues in Bangladesh and the Netherlands are noted with thanks. Contact: Catharien.Terwisscha@wur.nl

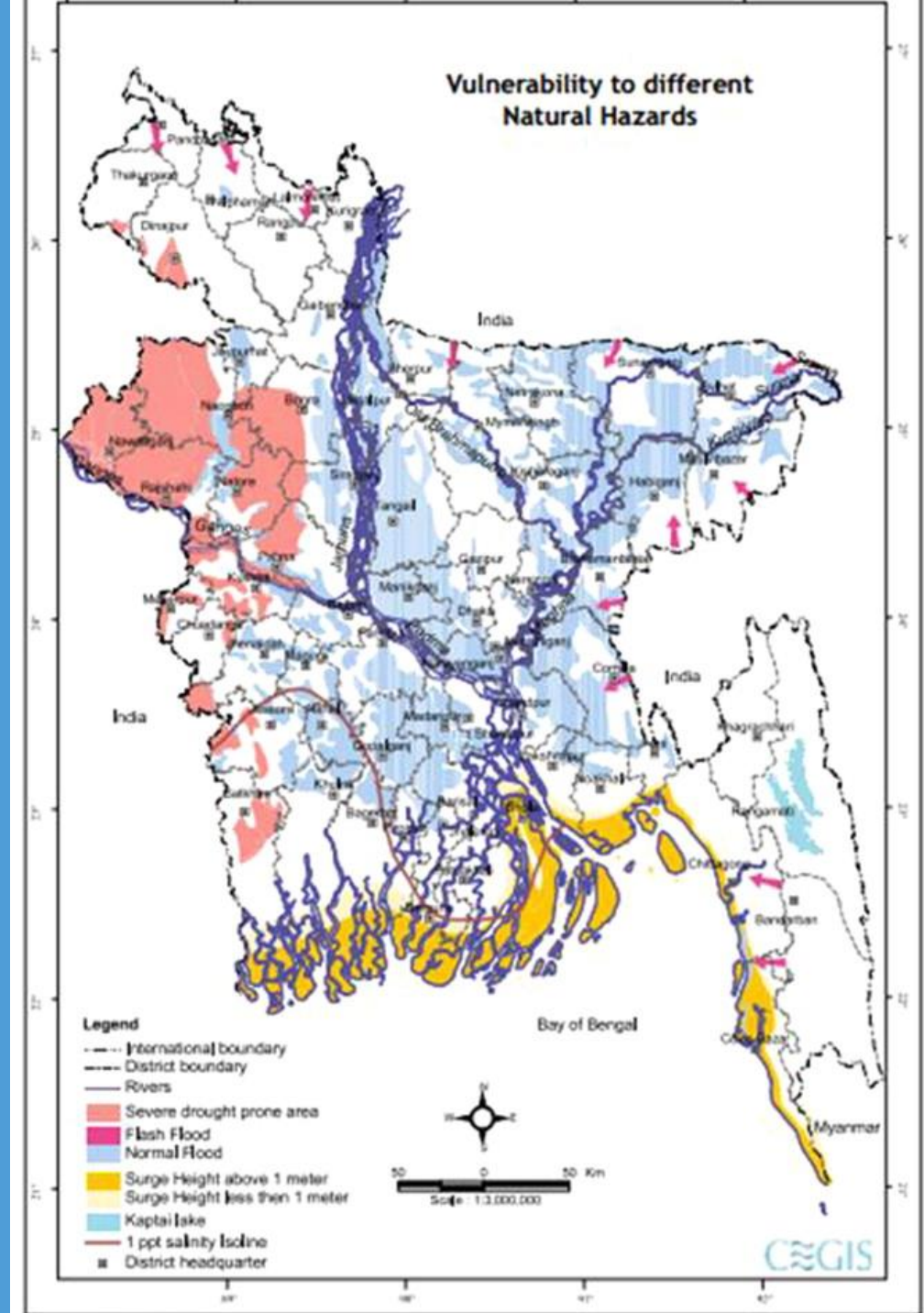
Progress in water management and climate change in Bangladesh

- Introduction
- Disasters and water management in BD
- Climate change
- Bangladesh Delta Plan
- Next steps



Bangladesh: disaster prone

- Cyclones
- Floods
 - Storm surge (after cyclone)
 - Flash floods (Haor area)
 - River floods
 - Rainwater floods
 - Flooding due to water logging
- Droughts
- Salinity
- Earth quakes



Bangladesh: flood prone country

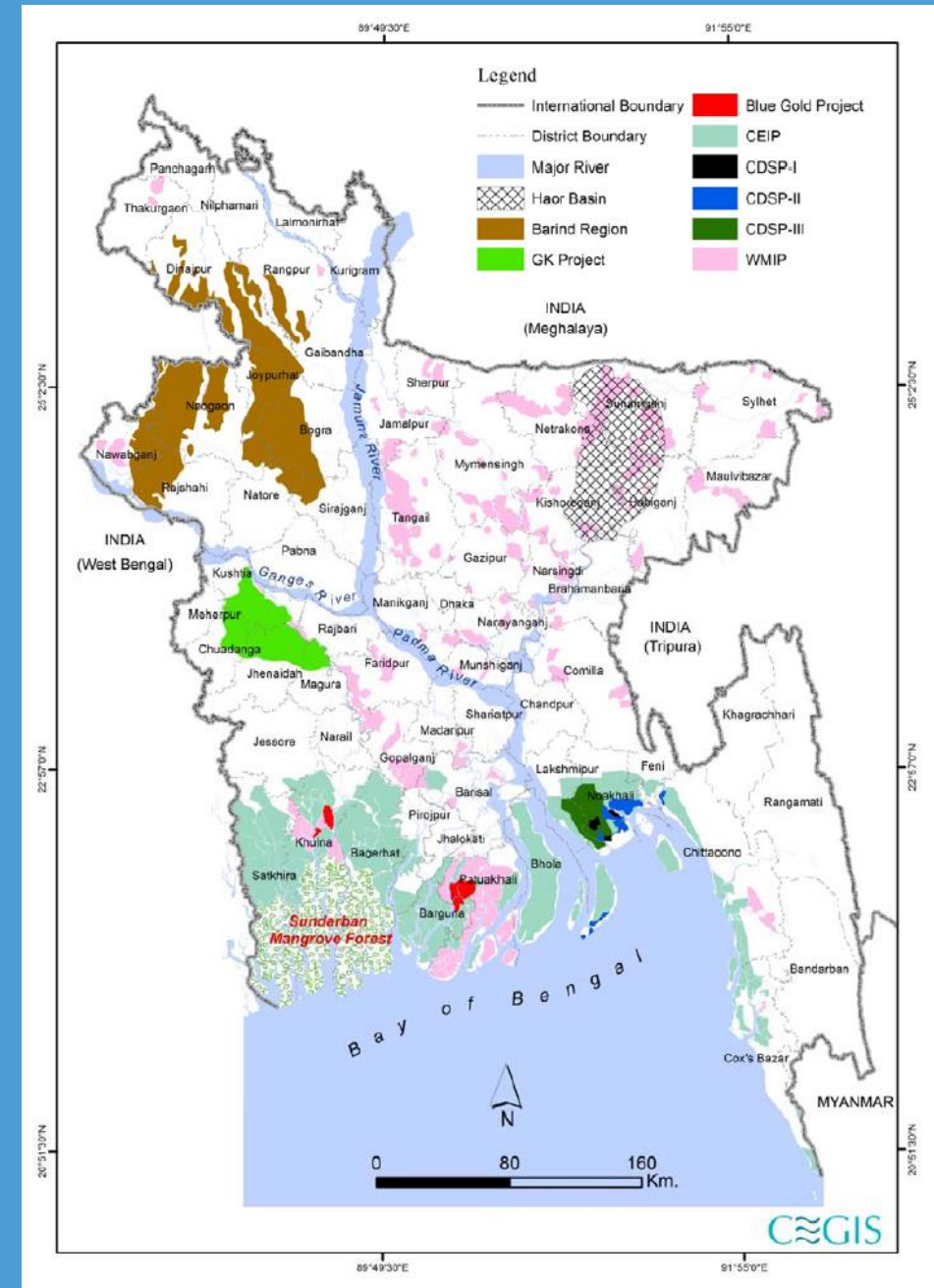
Coverage of inundation and deaths in major floods, 1954-1998

[13]

Year	Flooded area (km ²)	Percentage of total area	Number of deaths
1954	36920	25	112
1955	50700	34	129
1956	35620	24	
1962	37404	25	117
1963	43180	29	
1968	37300	25	126
1970	42640	28	87
1971	36475	24	120
1974	52720	35	1987
1984	28314	19	513
1987	57491	38	1657
1988	77700	52	2379
1998	100000	68	1050

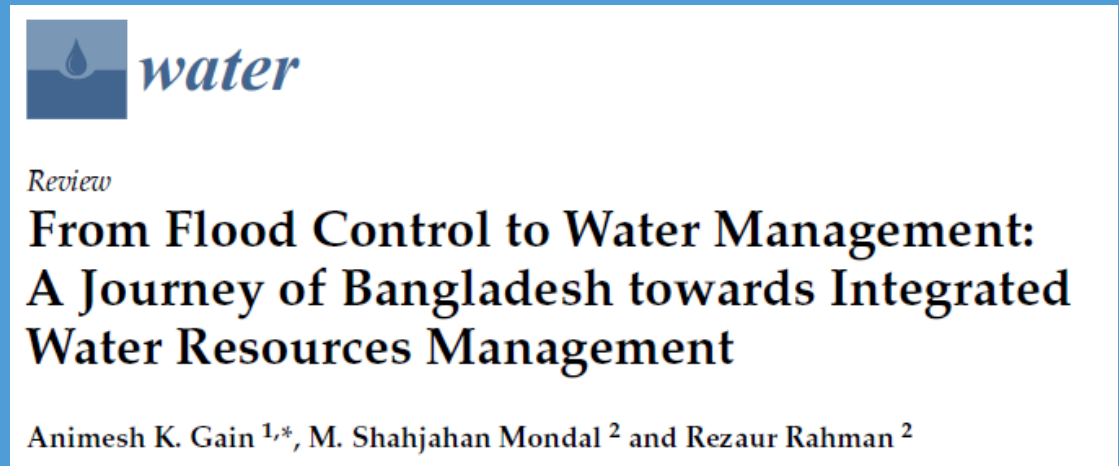
Locations water projects

Locations of important water management projects in Bangladesh



Water management – 60 years

- Krug Mission Report (1957); EPWAPDA 1964 Master Plan
- Objective: increase agricultural production through surface water based engineering solutions
- 1972 –pumping ground water
- National Water Plan 1983
- Flood Action Plan 1989-1995
- NWMP 2004 (25 year)
- ICZMP 2005
- Water Act 2013



Current numbers:

Improved access to safe drinking water (87%) (was 76% in 2000)

Use of improved sanitation (61%) (was 45% in 2000)

Climate change

Bangladesh Climate Change Strategy and Action Plan 2009

- Bangladesh front runner

- Bangladesh Climate Change Trust Fund (BCCTF)

- USD 100 million/year (90% gov't; 10% other)

- Focus on adaptation (some mitigation, do what can be done)

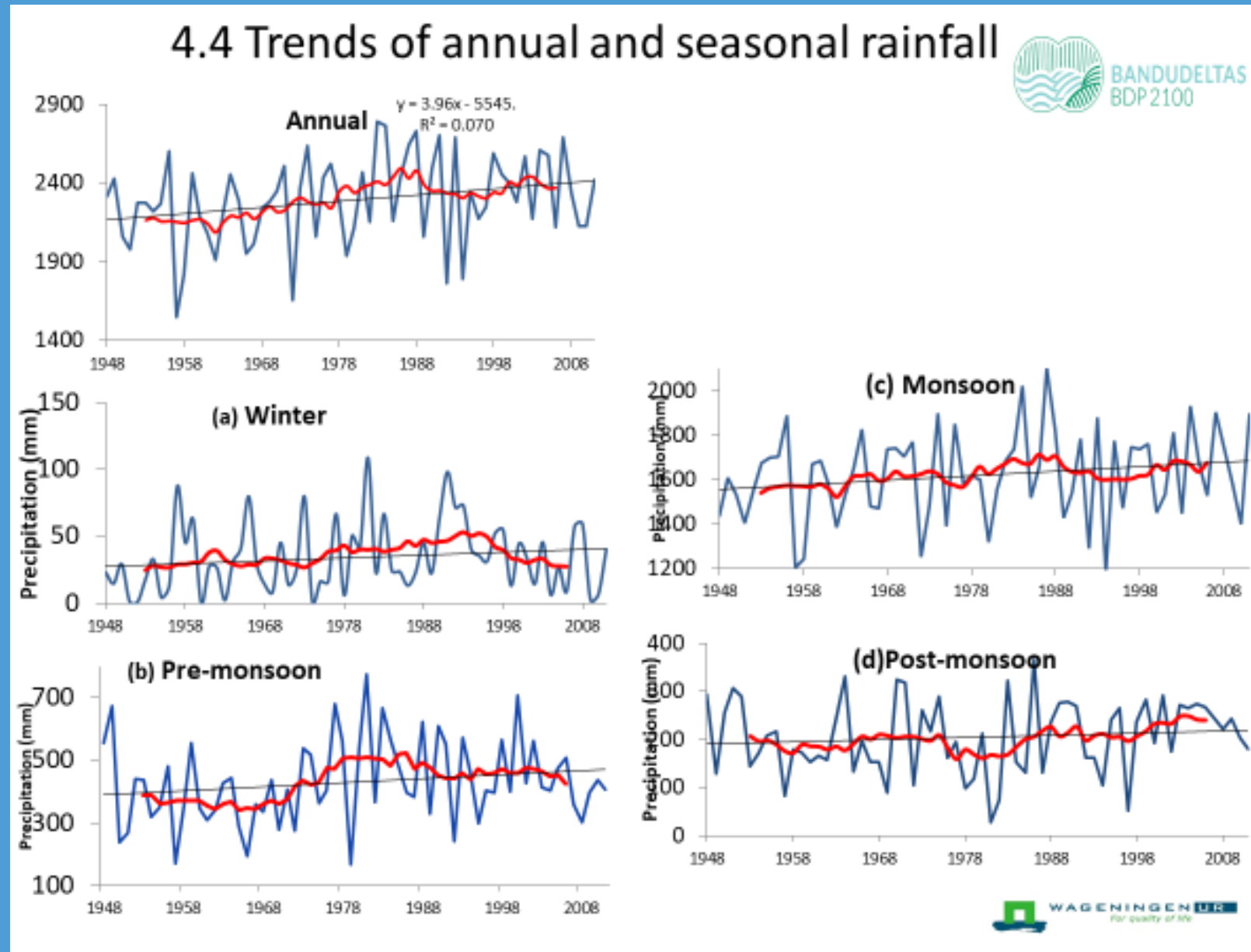
- Mainstreaming climate change in development planning

Currently: revision and update

- Opportunity to include 'loss and damage' and compensation; embedding climate change in diplomacy (Bangladesh as front runner – others can learn from Bangladesh)

Climate change

- Temperature rise
- Rainfall increase
- High variability
- High uncertainty
- Need for measurement
- (outside the cities!)
- Need for research/facts

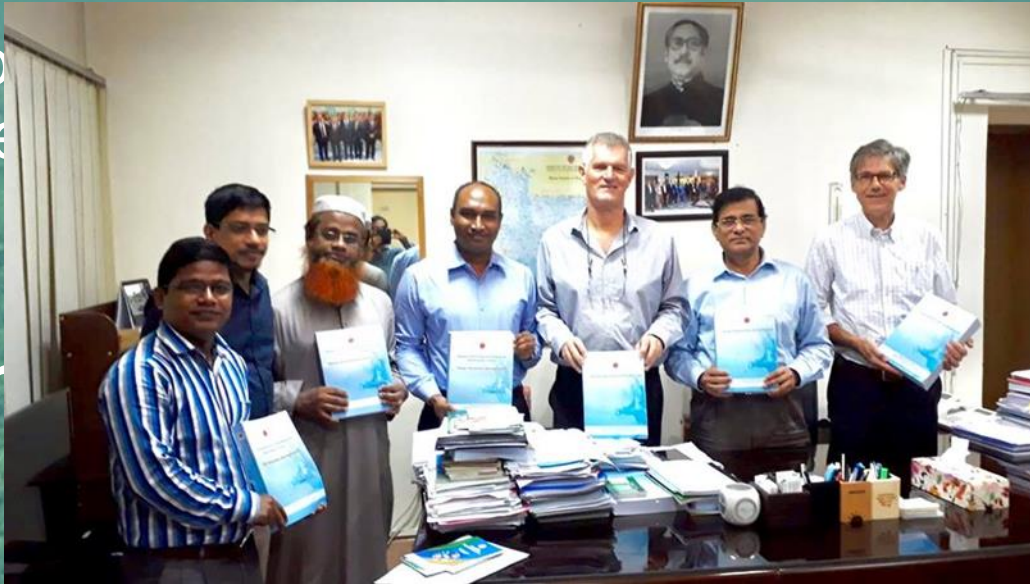


Source: Dewan Abdul Quadir, Catharien Terwisscha van Scheltinga, Fulco Ludwig and Toma Rani Saha, *Recent changes in temperature and rainfall trends and variability over Bangladesh*, presented at the Gobeshona conference for research on climate change, Dhaka, Jan 2016

Bangladesh Delta Plan 2100

Develop
the Face

Catha
+ form




GoB General Economic Division (GED)
Planning Commission
and
GoN Embassy of Kingdom of The Netherlands (EKN)

Management in
Primary Issues

Ittinga

NEC approves 100-year delta plan

Published: ☉ September 04,
2018 17:26:27 | Updated: ☉
September 06, 2018 20:15:17 



The National Economic Council (NEC) has approved the long-awaited mega strategy 'Bangladesh Delta Plan (BDP) 2100' in a bid to tap the huge potentials of Bangladesh as a delta country through water resources management, ensuring food and water security and tackling disasters.

Bangladesh Dutch Delta Advisory
Services (BanDuDeltAS)



“Ensure long term **water and food security**, **economic growth** and **environmental sustainability**

while

effectively coping with natural disasters, climate change and other delta issues

through

robust, adaptive and integrated strategies, and equitable water governance.”

,

Aligning National & International Goals & Vision



- **Vision 2021**
- **Vision 2041**
- **National Sustainable Development Plan**
- **National Social Protection Plan**
- **National Water Management Plan**
- **7th Five Year Plan +**
- **Many other previous plans**

- **Sustainable Development Goals (SDGs)**
 - **Goals 6, 13 and 14**
 - **Goals 1, 2, 5, 8, 9, 11, 15**

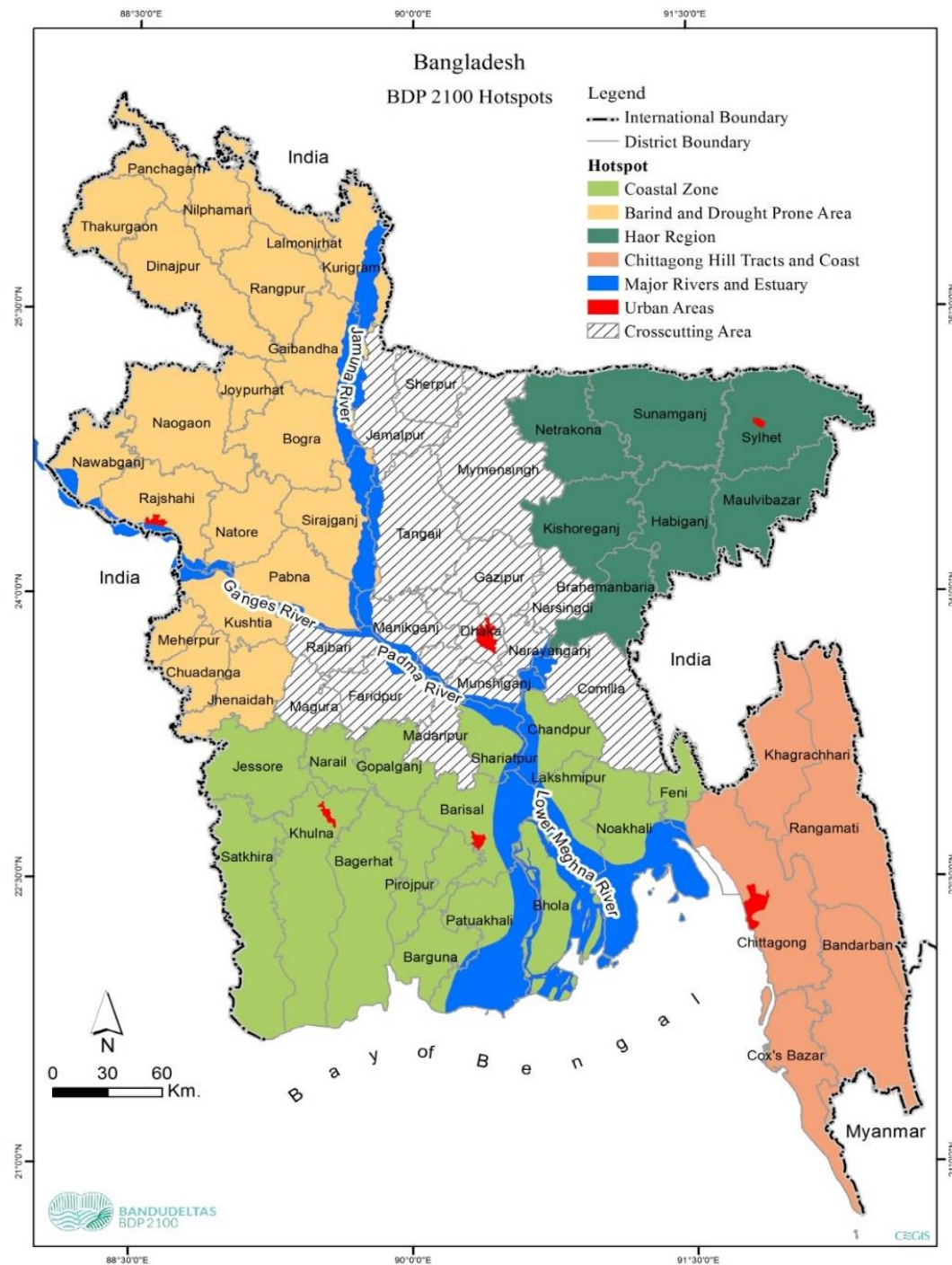
Goals to achieve the Delta Vision



- ◉ **Goal 1: Ensure safety from floods and climate change related disasters**
- ◉ **Goal 2: Ensure water security and efficiency of water usages**
- ◉ **Goal 3: Ensure sustainable and integrated river systems and estuaries management**
- ◉ **Goal 4: Conserve and preserve wetlands and ecosystems and promote their wise use**
- ◉ **Goal 5: Develop effective institutions and equitable governance for in country and trans-boundary water resources management**
- ◉ **Goal 6: Achieve optimal use of land and water resources**

Process of development:

- Base line studies (8)
- Consultations
- Vision development
- Strategy development in selected Hotspots



(Indicative) Strategies per Hotspot

Major Rivers and Estuaries

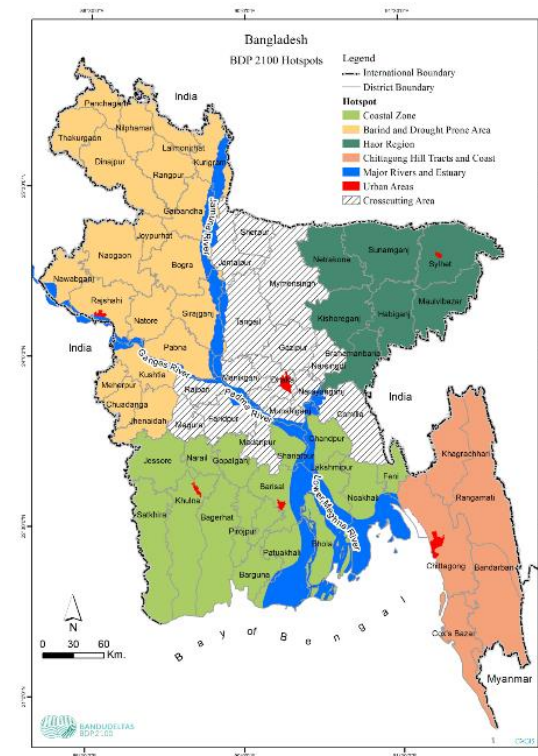
- River Basin Management through stabilization / channelization, dredging,
- Land reclamation in the rivers and Meghna Estuary
- Abstraction of surface water from major rivers through barrages & reservoirs
- Navigation and inland port development

Coastal Zone

- Improvement of coastal defenses considering climate change & sea-level rise
- Land reclamation and land development
- Protection works, port development

Barind & Drought Prone Areas

- Improved surface water management programs
- Ground water management; retention
- Revitalization and restoration of beels and water bodies



(Indicative) Strategies per Hotspot

Haor and Wetlands

- Integrated Water Management for livelihood improvement
- Village protection against wave action
- Haor Ecosystem Management

Urban Areas

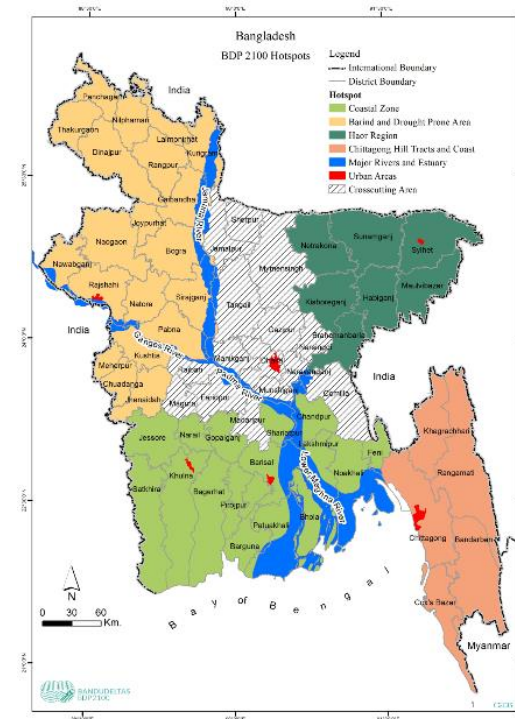
- Improved flood protection and drainage improvement program
- Integrated Water Supply and Sewage Management Program (incl. water treatment)

CHT and Coasts

- Integrated Eastern Hills Resources Management Program
- Integrated River Basin Management and coastal protection

Cross-cutting

- Fresh Water Management Program (irrigation, rural water supply and sanitation)
- Flood Risk Management and Rationalization of existing FCD/FCDI Projects



Annex to BDP2100: Investment Planning and Implementation

World Bank Investment Planning team elaborated Concept Notes into an Investment Plan (80 projects were selected)

Implementation Guideline will be prepared to:

- Implementation by implementing agencies through Implementing Ministries
- Guide and assist Implementing Agencies in different sectors to prepare their implementation plans
- Support the establishment and functioning of Delta Plan related institutions and implementing agencies.



Knowledge Portal

Bangladesh Delta Plan 2100, Formulation Project



Government of the Netherlands

Home

Data Explorer

Metadata Viewer

Export Tool

Data Explorer

? User Manual

Log In...

Spatial Layers

Search Layer

Water Resources

- ☐ Detail River
- ☐ Transboundary River
- ☐ Waterbodies 2010
- ☐ Soil Salinity 2009
- ☐ Arsenic
- ☐ Bankline 2014
- ☐ BWDB Project
- ☐ Catchment
- ☐ Transboundary Catchment
- ☐ Channel Jamuna
- ☐ Char Land
- ☐ Drainage Map
- ☐ Coastline 1973-2010
- ☐ Coastline 2010
- ☐ Haor Boundary Type
- ☒ River Flood Return Period
- ☐ Proposed Structure
- ☐ Embankment
- ☐ Rennels River System

Others

Search Document

Baseline Studies

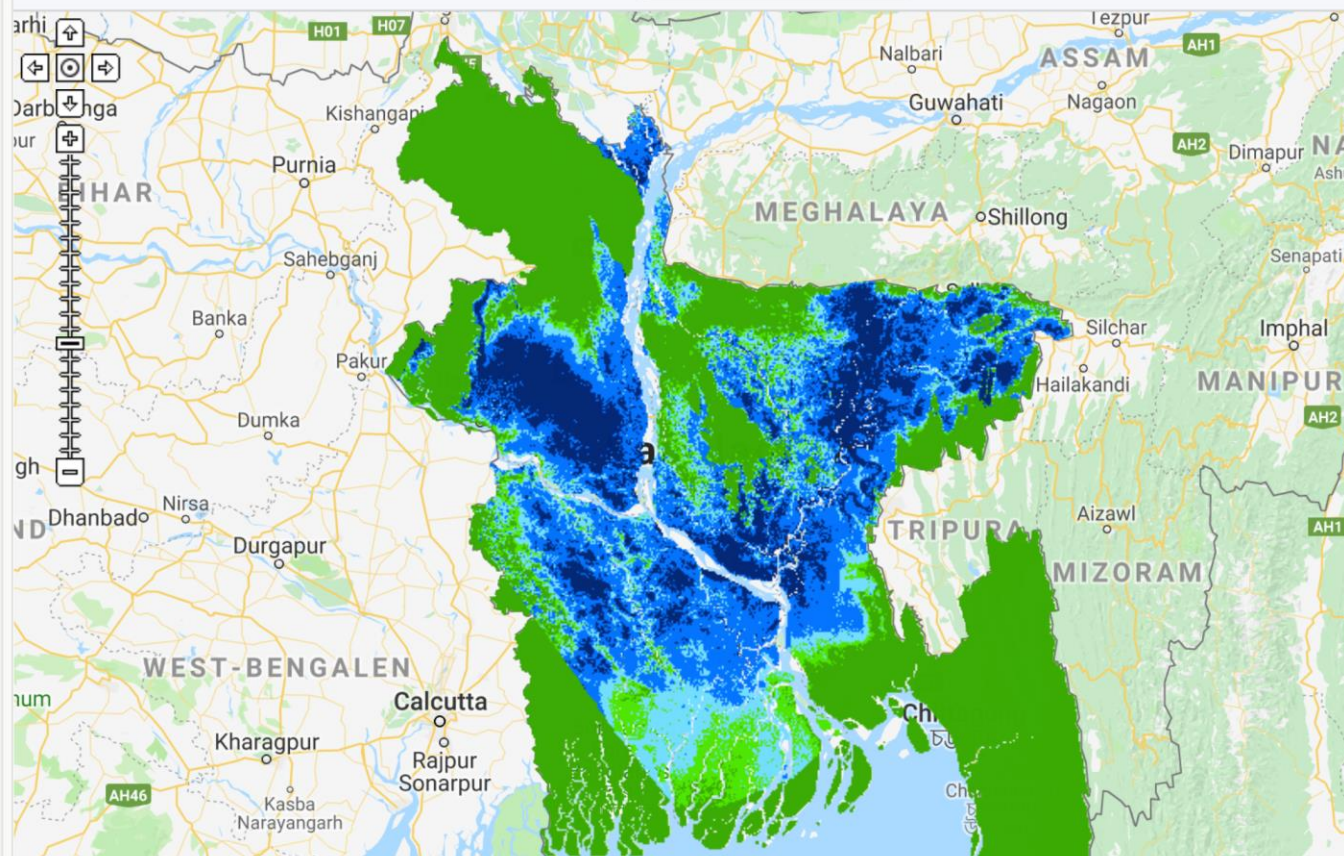
☐ Legend

☐ Label



Active Layer

100 Year



Transparency:



Legend:

- ☒ 100 Year
- ☒ 2 Year

Variation Map Layer

- ☒ 2 Year
- ☐ 5 Year
- ☐ 10 Year
- ☐ 25 Year
- ☐ 50 Year
- ☒ 100 Year

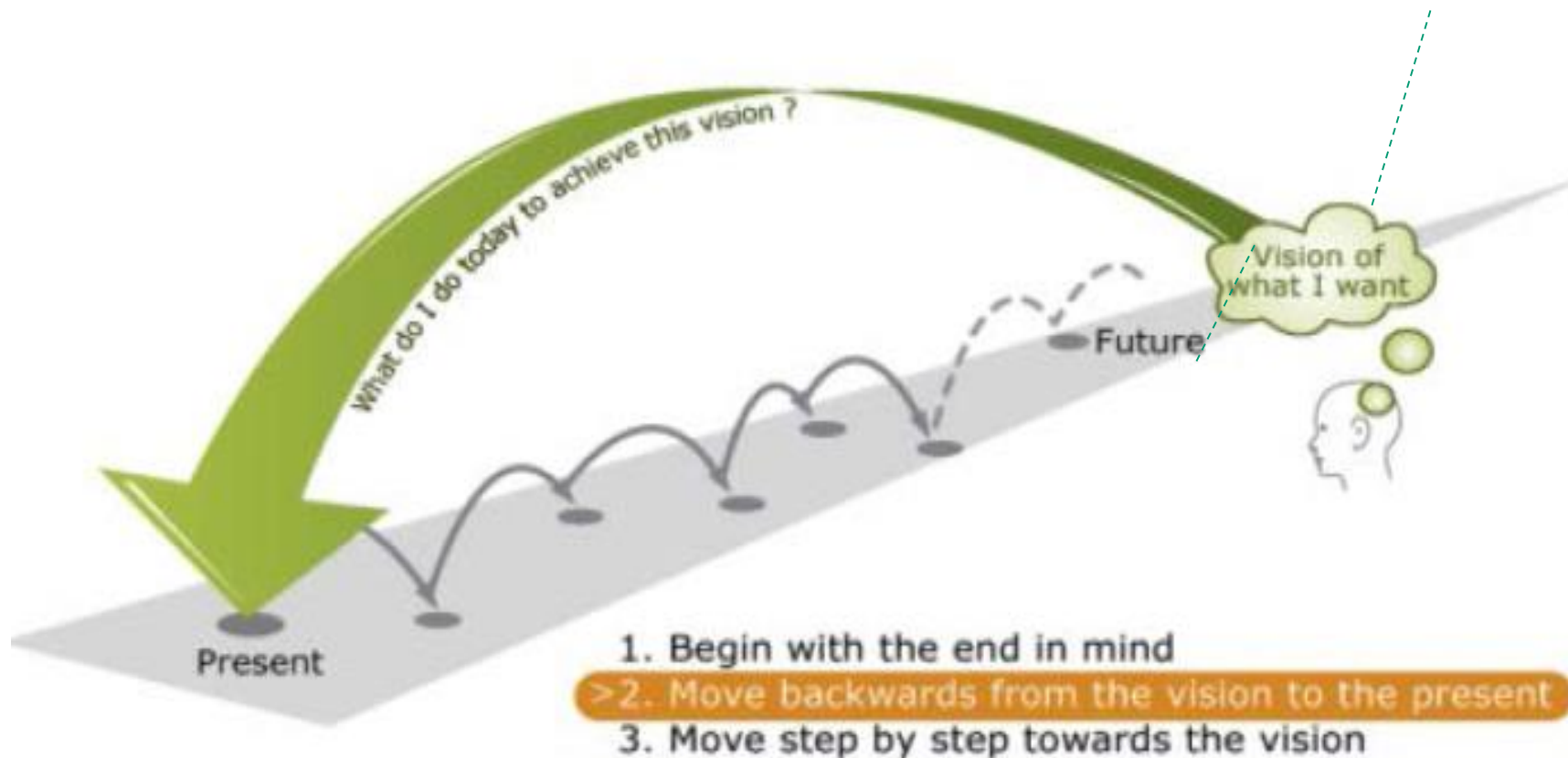
Map Locator:



Web location: <http://202.53.173.179/delta/> (does not yet work well)

Back Casting the Vision

'Climate Change proof Bangladesh'



**Plan for future
conditions!**

Act now

Summary: time line BDP2100

2009 Interaction PM NL and BD

2010 Water Mondiaal mission to Bangladesh

2011-2012 Delta Plan Preparatory Team, led by WUR.

Does BD need a Delta Plan? And if so, how should it look like?

2012 Signing of agreement BD and NL on preparation of Delta Plan

2014 Start of Delta Plan Formulation Team, consortium Bandudeltas, led by Twijnstra Gudde

2015 Signing of agreement BD, NL and WorldBank – work on investment strategy

2016 Draft Delta Plan submitted

2018 National Economic Council approves BDP2100, implementation starts



Need for capacity to implement



Deltacap project, creating capacity to implement adaptive delta management

Creating a Delta Centre

a.o. focal points involvement, needs assessment, gender, dash board

Training

- Longer term planning, use of scenarios, integrated assessment
- Innovative collaboration, multiple stakeholders
- Participatory water management, local level information services
- National level information services for sustainable delta management



www.deltacapproject.net

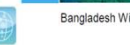
Delta Alliance Bangladesh Wing Partners



Coordinator



Sponsor and Partners of DeltaCAP



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Applied research supporting implementation

Joint cooperation program

Longer term collaboration between IWM, CEGIS, Deltares, WUR

1. App – Developing an app to use the knowledge portal of BDP2100
2. River – river morphology, free flow, Old Brahmaputra
3. Polder – will new inlet mechanisms improve polder management
4. Water quality – in situ, real time monitoring of water quality
5. Agric – cc – what about the agriculture of the future, under climate change and food system changes, is there water?



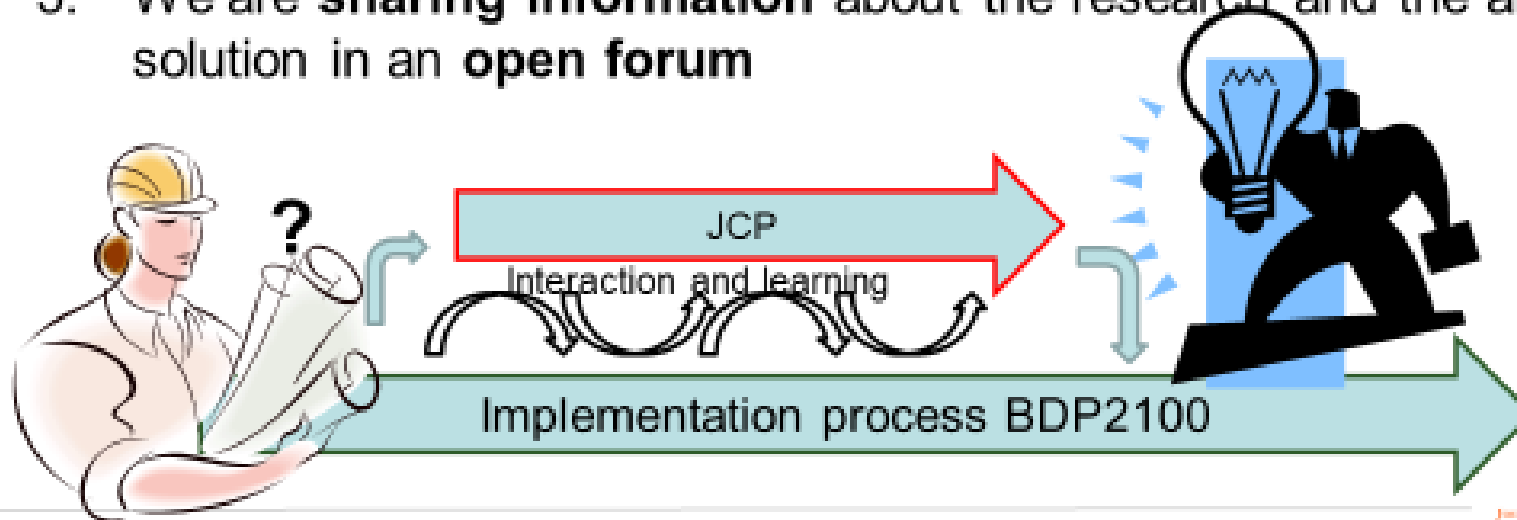
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Communication



Typical elements for communication on this side by side research are

1. There is an **actual question** to be answered, and in the research process we are **interacting** with the person/organization asking the question
2. Learning takes place in the research process and besides communicating about the research, we also **communicate about the learning**
3. We are **sharing information** about the research and the answer / solution in an **open forum**



Thank you

ধন্যবাদ

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[Bangladesh Delta Plan 2100](http://www.plancomm.gov.bd/#)

<http://www.plancomm.gov.bd/#>

click tab 'delta plan', for delta plan and
baseline studies



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Themes for Baseline Studies



BANDUDELTA
BDP 2100

Water Resources

- I. Morphological Dynamics & River Management
- II. Water Resources
- III. Coastal Zone Issues

Water Supply and Sanitation

- I. Public Health, Water Supply and Sanitation

Disaster Risk Reduction

- I. Climate Change Issues
- II. Disaster Management

Spatial Planning

- I. Land Resources
- II. Urbanization and Settlement

Food Security

- I. Agriculture and Food Security
- II. Fisheries and Livestock

Environmental Management

- I. Ecological Settings
- II. Forests and Biodiversity
- III. Environmental Pollution

Economics and Finance

- I. Growth of Population and Management in the Context of Resources Setting
- II. Socio-Economic and Demographic Conditions
- III. Sustainable Transportation Infrastructures

Governance

- I. Information and Creation of Knowledge Management Institution
- II. Institutional Framework & Arrangements; Core Governance
- III. Regional Cooperation